

091926521

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 39-21(51844)A	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US01/16550	International filing date (day/month/year) 21/05/2001	Priority date (day/month/year) 19/05/2000
International Patent Classification (IPC) or national classification and IPC A01N57/20		
Applicant MONSANTO TECHNOLOGY, LLC et al.		



1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 11/12/2001	Date of completion of this report 10.04.2003
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Boletti-Cremers, K Telephone No. +49 89 2399 8541 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US01/16550

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-310 as originally filed

Claims, No.:

1-151 as originally filed

Drawings, sheets:

1-4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US01/16550

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
- ☒ claims Nos. 97--110, 111-144 (partially), 115-151.

because:

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☒ no international search report has been established for the said claims Nos. 97-110, 111-144 (partially), 115-151.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

- ☐ the written form has not been furnished or does not comply with the standard.
- ☐ the computer readable form has not been furnished or does not comply with the standard.

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US01/16550

- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
- ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:
- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-96, 111-144 (partially).

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	
	No:	Claims	1-96, 111-144 (partially)
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-96, 11-144 (partially)
Industrial applicability (IA)	Yes:	Claims	1-96, 111-144 (partially)
	No:	Claims	

2. Citations and explanations **see separate sheet**

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US01/16550

POINTS IV and III.

Insofar as the IPEA agrees with the non unity objection as submitted by the ISA in its request to pay additional search fees, present examination report will merely deal with the first invention as defined in said invitation.

Since the inventions 3. to 6., as defined by the ISA, were not searched, present IPER will not be deal with those inventions, which are merely characterised by claims 97-151 on file and which were not searched at present.

POINT V.

The following documents, quoted in the I.S.R., have been considered as relevant for the examination of the present application. Their numbering will be adhered to for the rest of the procedure.

- (1) WO-A-00 15037, cited in the application
- (2) EP-A-0 290 416.
- (3) WO-A-9817113, cited in the application.
- (4) US-A-5863863

1. Novelty.

- 1.1 In view of the fact that the compositions of (3) are meant to behave as plant growth regulators and that they non only encompass a herbicide which can be glyphosate or glyphosinate together with a substance which forms anisotropic aggregates and in view of the examples of (3), the whole content of (3) (see also the examples which all refer to the use of glyphosate; refer also to the passages as quoted in the search report) overlaps with present claims 1-90 which cannot be regarded to be novel in their present formulations.
- 1.2 Although not involving the retarding of growth of vegetation, the formulations / compositions of (4) (refer to the claims of (4) and example 3 of (4)) fall within the scope of present claim 67 -76 which cannot be regarded as novel in their present

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US01/16550

formulations .

- 1.3 Since they are also meant to retard the growth of vegetation (see page 3 of (1)) , the glyphosate concentrates of (1) fall within the open ended and functional definitions of claims 1-96 and 111-144 which cannot be regarded as novel in their present formulations.
- 1.4 The same conclusions as for (1) are drawn from the content of (2) which affects the novelty of claims 1-96 for the same reasons as for (1) .

Inventive step.

In view of the content of the documents cited above and the pending novelty objections , the examination of the inventiveness of the application will be postponed until the novelty could be acknowledged . At the entry of the regional phase , the Applicant will nevertheless already be invited to comment each of the documents and take already position about their contents.

Formal Point.

(2) and (4) should be mentioned and briefly discussed in the description .

PATENT COOPERATION TREA

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

RECEIVED
MAY 15 2003
TECH CENTER 1600/29806
091206.521

Applicant's or agent's file reference MTC 6647.16	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 01/16550	International filing date (day/month/year) 21/05/2001	(Earliest) Priority Date (day/month/year) 19/05/2000
Applicant MONSANTO TECHNOLOGY, LLC et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

AQUEOUS PESTICIDE FORMULATIONS AND NOVEL SURFACTANTS

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

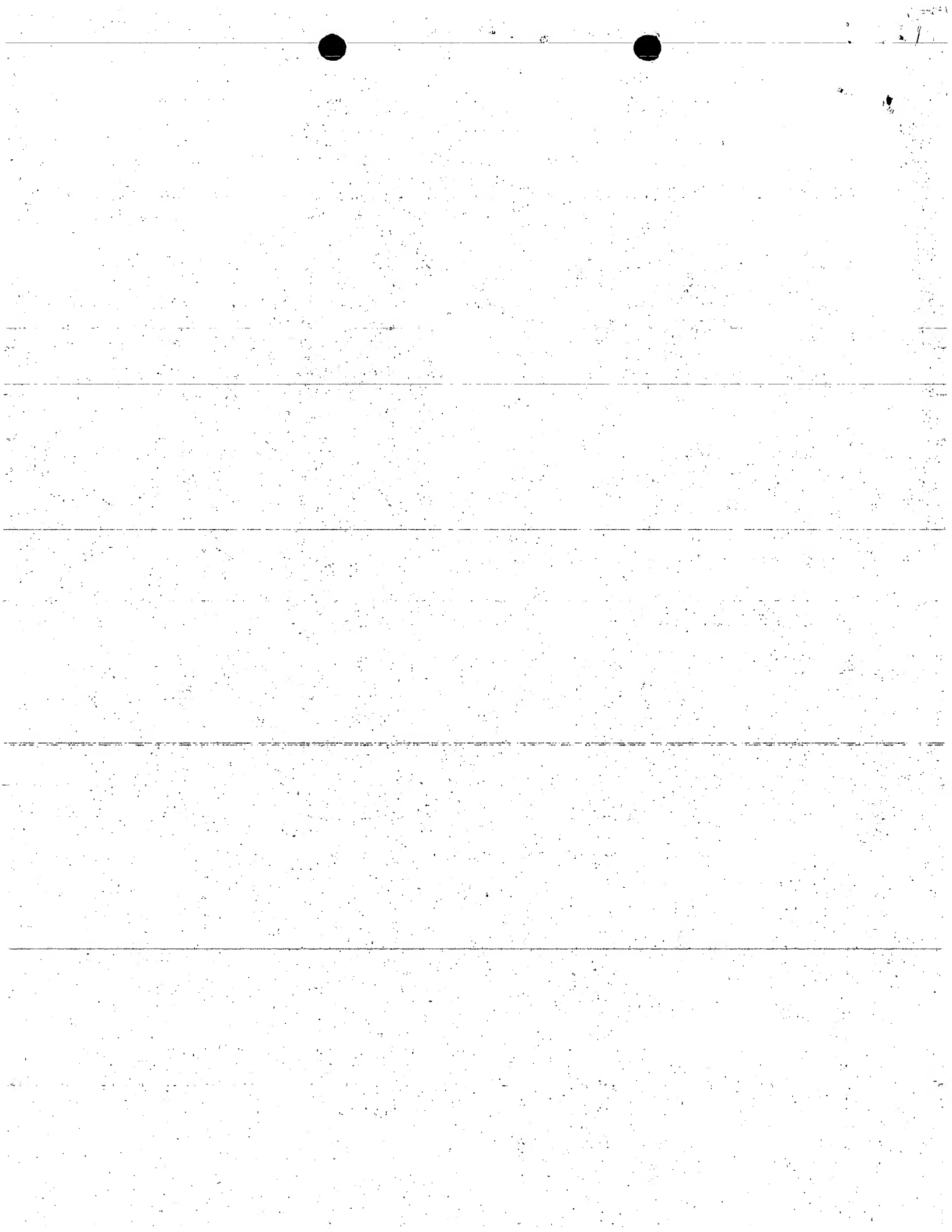
INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 01/16550

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

The present invention relates to aqueous pesticide formulations containing high concentrations of a herbicide, such as the potassium salt of glyphosate, together with surfactants or other adjuvants, including formulations which form anisotropic aggregates (AA) or liquid crystals (LC) on or in the foliage of a plant. More specifically, the present invention relates to glyphosate containing herbicidal formulations containing one or more surfactants that form anisotropic aggregates and/or liquid crystals to facilitate the introduction, uptake and translocation of glyphosate throughout the plant. Methods of killing or controlling unwanted vegetation using such formulations are also described. The invention also relates to novel surfactants and pesticide compositions containing such surfactants.



INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/16550

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A01N57/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, CHEM ABS Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 15037 A (BEAN MICHAEL JOHN ;FORMSTONE CARL ANDREW (GB); OTTAWAY ALAN VICTOR) 23 March 2000 (2000-03-23) cited in the application claims	91-96, 111-144
X	EP 0 290 416 A (MONSANTO EUROPE SA) 9 November 1988 (1988-11-09) table 3	91-96, 111-144

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority, claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

26 February 2003

Date of mailing of the international search report

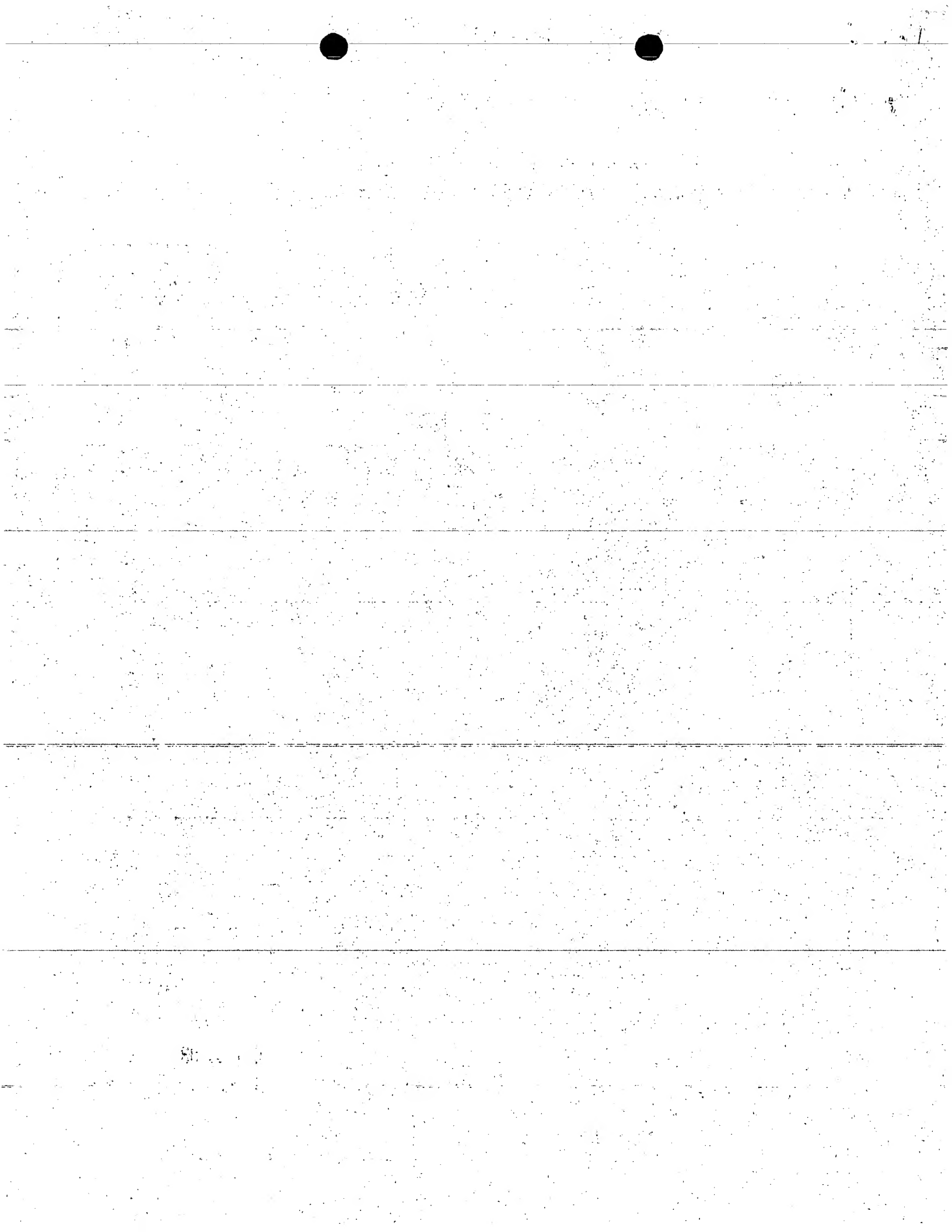
05.03.03

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx: 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Decorte, D



FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/16550

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

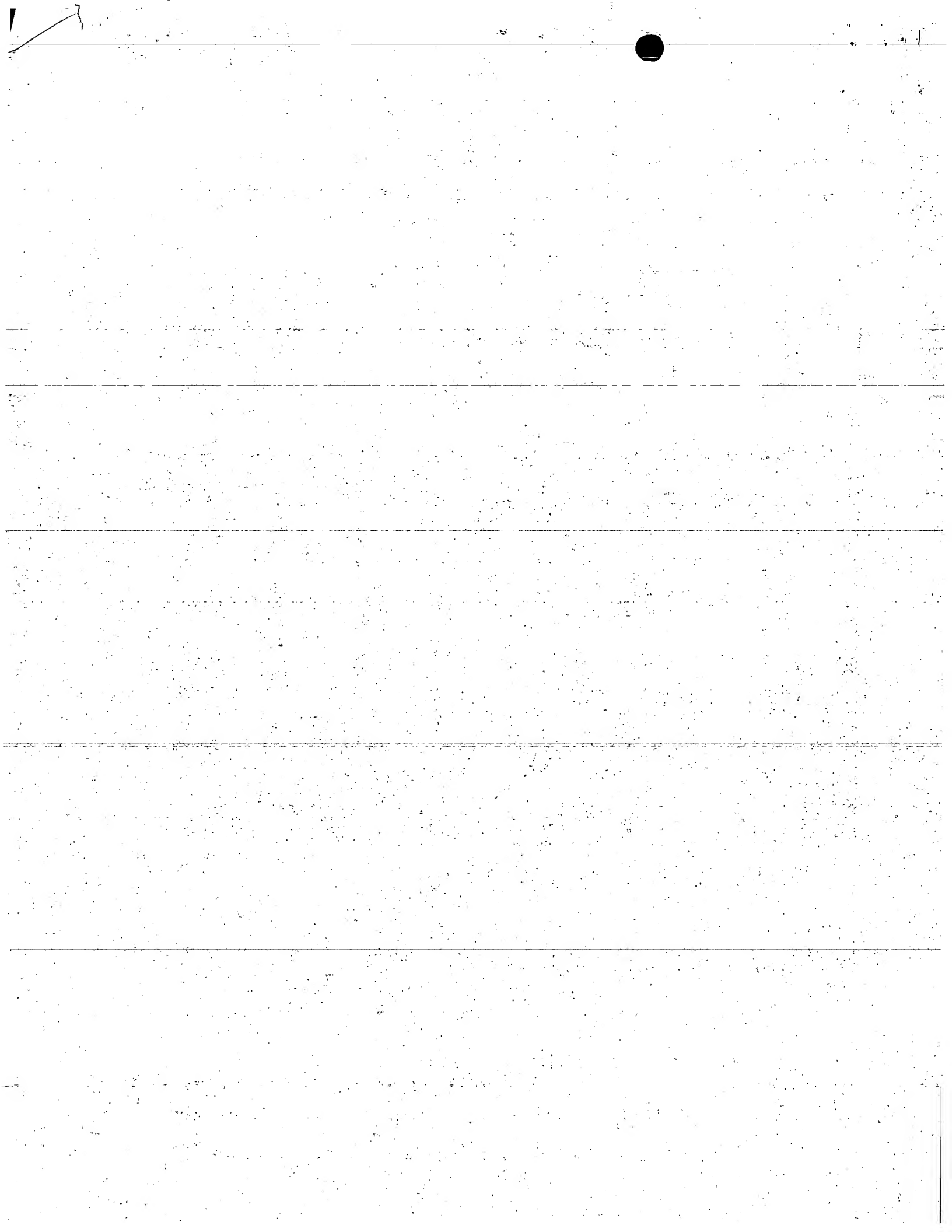
This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
1-96 (completely) and 111-144 (partially)
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.



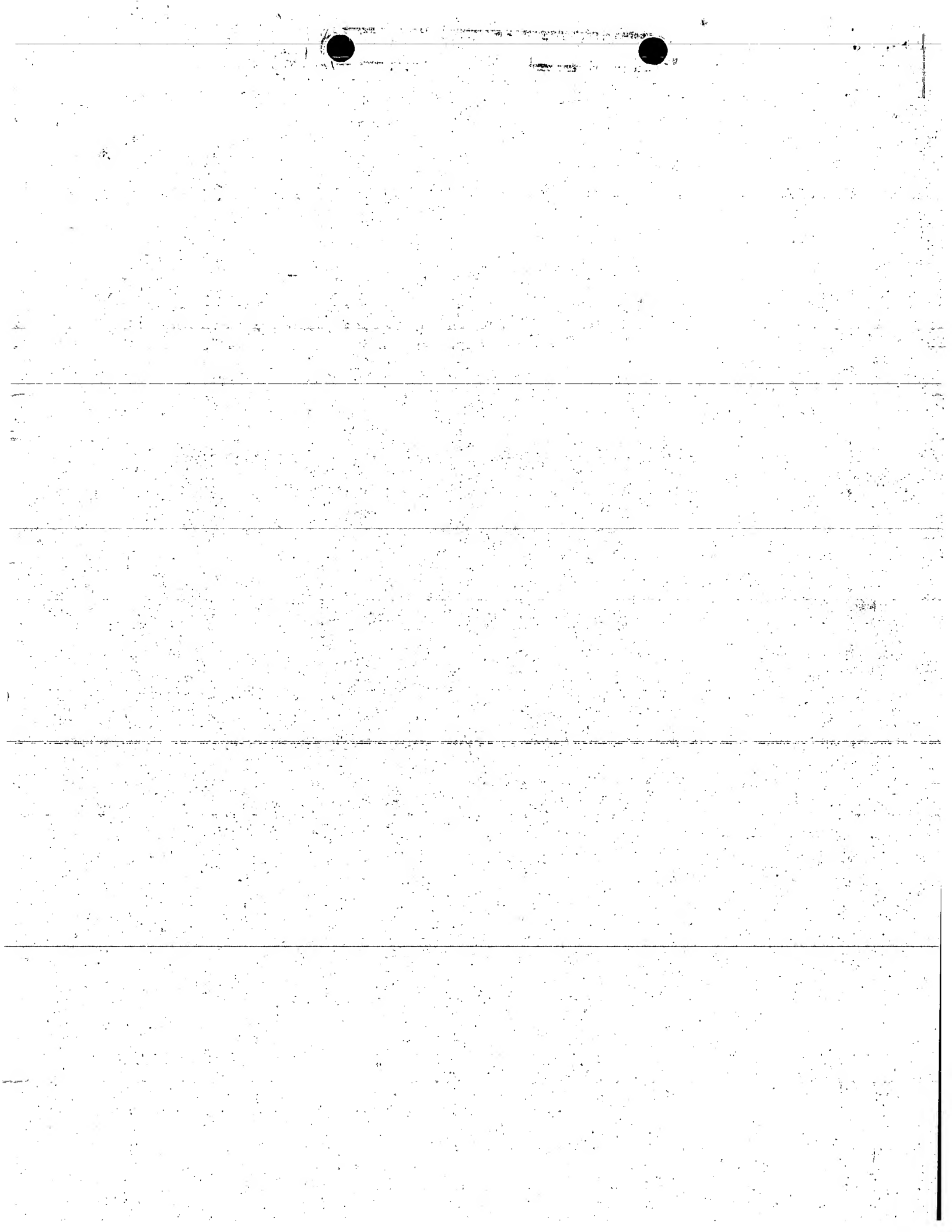
INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/16550

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0015037	A	23-03-2000	
		AT 227933 T	15-12-2002
		AU 5434799 A	03-04-2000
		BG 105433 A	31-12-2001
		BR 9913561 A	05-06-2001
		CA 2343158 A1	23-03-2000
		CN 1316880 T	10-10-2001
		DE 69904058 D1	02-01-2003
		EP 1111996 A1	04-07-2001
		WO 0015037 A1	23-03-2000
		HU 0103267 A2	28-12-2001
		JP 2002524476 T	06-08-2002
		NZ 510377 A	28-08-2002
		PL 346541 A1	11-02-2002
		US 2002160917 A1	31-10-2002
		US 6451735 B1	17-09-2002
EP 0290416	A	09-11-1988	
		AT 90835 T	15-07-1993
		CA 1324727 A1	30-11-1993
		DE 3881954 D1	29-07-1993
		DE 3881954 T2	30-09-1993
		DK 234888 A	30-10-1988
		EG 19063 A	29-09-1994
		EP 0290416 A2	09-11-1988
		ES 2058337 T3	01-11-1994
		FI 881997 A ,B,	30-10-1988
		IE 62968 B1	08-03-1995
		IL 86217 A	06-09-1992
		JP 2526270 B2	21-08-1996
		JP 63284106 A	21-11-1988
		PT 87352 A ,B	01-05-1988
		ZA 8803052 A	22-02-1989
		CN 1031789 A ,B	22-03-1989
		HU 49272 A2	28-09-1989
		KR 9203974 B1	21-05-1992



ME COPY PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

International Application No.

PCT/US 01/16550

International Filing Date

21 MAY 2001 (21.05.01)

Name of receiving Office and PCT International Application

PCT INTERNATIONAL
APPLICATION RO/US

Applicant's or agent's file reference MTC 6647.16
(if desired) (12 characters maximum)

Box No. I TITLE OF INVENTION
POTASSIUM GLYPHOSATE FORMULATIONS

Box No. II APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

MONSANTO TECHNOLOGY, LLC
800 North Lindbergh Boulevard
St. Louis, Missouri 63167
United States of America

☐ This person is also inventor.

Telephone No.
1-314-694-1000

Facsimile No.
1-314-694-9058

Teleprinter No.

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant for the purposes of: ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this box is the applicant's State (that is country) of residence if no State of residence is indicated below.)

LENNON, Patrick, J.
50 Wilshire Terrace
Webster Groves, Missouri 63119
United States of America

This person is:

☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:

☒ agent ☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

PETRILLO, Kathleen, M.
SENNIGER, POWERS, LEAVITT & ROEDEL
1 Metropolitan Square, 16th Floor
St. Louis, Missouri 63102
United States of America

Telephone No.
314-231-5400

Facsimile No.
314-231-4342

Teleprinter No.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Continuation of Box N . III FURTHER APPLICANT(S) AND/OR (FURTHER INVENTOR(S))

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

CHEN, Xiangyang
857-N Foxsprings Drive
Chesterfield, Missouri 63017
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
China

State (that is, country) of residence:
United States of America

This person is applicant
for the purposes of:

☐ all designated
States

☐ all designated States except
the United States of America

☒ the United States
of America only

☐ the States indicated in
the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

ARHANCET, Garciela, B.
4 Country Fair
Creve Coeur, Missouri 63141
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant
for the purposes of:

☐ all designated
States

☐ all designated States except
the United States of America

☒ the United States
of America only

☐ the States indicated in
the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

GLAENZER, Jeanette, L.
7112 Westmoreland Avenue
University City, Missouri 63130
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant
for the purposes of:

☐ all designated
States

☐ all designated States except
the United States of America

☒ the United States
of America only

☐ the States indicated in
the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

GILLESPIE, Jane, L.
7229 Cornell Avenue
St. Louis, Missouri 63130
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant
for the purposes of:

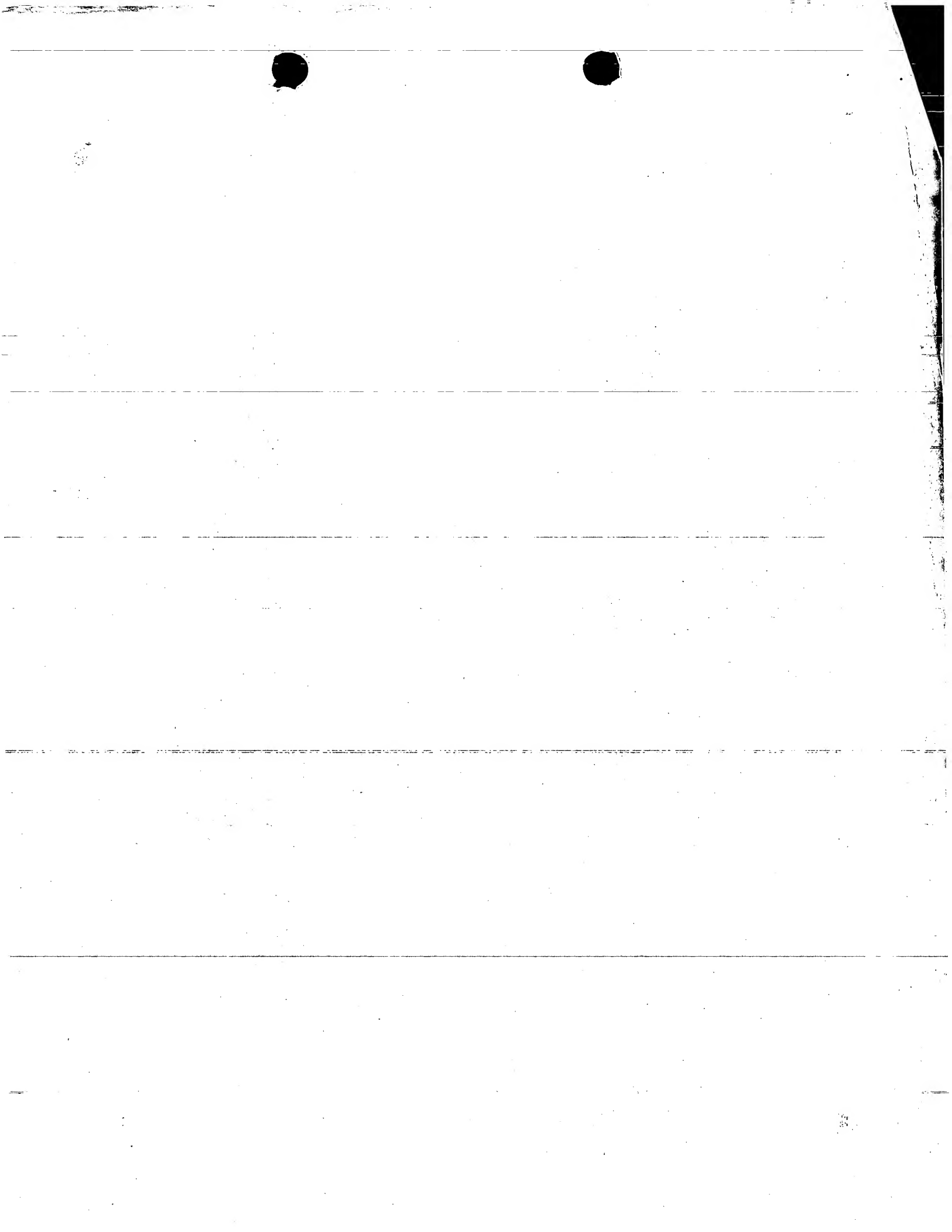
☐ all designated
States

☐ all designated States except
the United States of America

☒ the United States
of America only

☐ the States indicated in
the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.



Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER INVENTOR(S))

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

GRAHAM, Jeffrey, A.
109 Carriage View Drive
Wildwood, Missouri 63040
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

BECHER, David, Z.
12829 Mariners Point Court
St. Louis, Missouri 63141
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

WRIGHT, Daniel, L.
5911 Clifton Avenue
St. Louis, Missouri 63109
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

AGBAJE, Henry, E.
11427 Daykin Drive
St. Louis, Missouri 63146
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER INVENTOR(S))

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

XU, Xiaodong, C.
537 Emmanuel Court
Valley Park, Missouri 63088
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
China

State (that is, country) of residence:
United States of America

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

ABRAHAM, William
17153 Lafayette Trails Drive
Wildwood, Missouri 63088
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
India

State (that is, country) of residence:
United States of America

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

BRINKER, Ronald, J.
925 Oakgrove Park Court
Ellisville, Missouri 63021
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

PALLAS, Norman, R.
21 Jamestown Farm Drive
Florissant, Missouri 63034
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER INVENTOR(S))

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

WIDEMAN, Al, S.
13242 Windygate Lane
St. Louis, Missouri 63146
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant
for the purposes of:

☐ all designated
States

☐ all designated States except
the United States of America

☒ the United States
of America only

☐ the States indicated in
the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

MAHONEY, Martin, D.
116 Oak Ridge West Drive
St. Peters, Missouri 63376
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant
for the purposes of:

☐ all designated
States

☐ all designated States except
the United States of America

☒ the United States
of America only

☐ the States indicated in
the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

HENKE, Susan, L.
123 Parsons Drive
Webster Groves, Missouri 63119
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
United States of America

State (that is, country) of residence:
United States of America

This person is applicant
for the purposes of:

☐ all designated
States

☐ all designated States except
the United States of America

☒ the United States
of America only

☐ the States indicated in
the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only
☐ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant
for the purposes of:

☐ all designated
States

☐ all designated States except
the United States of America

☐ the United States
of America only

☐ the States indicated in
the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):
Regional Patent

- ☒ **AP ARIPO Patent:** GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ **EA Eurasian Patent:** AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and the PCT
- ☒ **EP European Patent:** AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT.
- ☒ **OA OAPI Patent:** BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line).....

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> AE United Arab Emirates | <input checked="" type="checkbox"/> LR Liberia |
| <input checked="" type="checkbox"/> AL Albania..... | <input checked="" type="checkbox"/> LS Lesotho..... |
| <input checked="" type="checkbox"/> AM Armenia..... | <input checked="" type="checkbox"/> LT Lithuania..... |
| <input checked="" type="checkbox"/> AT Austria..... | <input checked="" type="checkbox"/> LU Luxembourg..... |
| <input checked="" type="checkbox"/> AU Australia..... | <input checked="" type="checkbox"/> LV Latvia..... |
| <input checked="" type="checkbox"/> AZ Azerbaijan..... | <input checked="" type="checkbox"/> MA Morocco..... |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina..... | <input checked="" type="checkbox"/> MD Republic of Moldova..... |
| <input checked="" type="checkbox"/> BB Barbados..... | <input checked="" type="checkbox"/> MG Madagascar..... |
| <input checked="" type="checkbox"/> BG Bulgaria..... | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia..... |
| <input checked="" type="checkbox"/> BR Brazil..... | |
| <input checked="" type="checkbox"/> BY Belarus..... | <input checked="" type="checkbox"/> MN Mongolia..... |
| <input checked="" type="checkbox"/> CA Canada..... | <input checked="" type="checkbox"/> MW Malawi..... |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein | <input checked="" type="checkbox"/> MX Mexico..... |
| <input checked="" type="checkbox"/> CN China..... | <input checked="" type="checkbox"/> NO Norway..... |
| <input checked="" type="checkbox"/> CR Costa Rica..... | <input checked="" type="checkbox"/> NZ New Zealand..... |
| <input checked="" type="checkbox"/> CU Cuba..... | <input checked="" type="checkbox"/> PL Poland..... |
| <input checked="" type="checkbox"/> CZ Czech Republic..... | <input checked="" type="checkbox"/> PT Portugal..... |
| <input checked="" type="checkbox"/> DE Germany..... | <input checked="" type="checkbox"/> RO Romania..... |
| <input checked="" type="checkbox"/> DK Denmark..... | <input checked="" type="checkbox"/> RU Russian Federation..... |
| <input checked="" type="checkbox"/> DM Dominica..... | <input checked="" type="checkbox"/> SD Sudan..... |
| <input checked="" type="checkbox"/> EE Estonia..... | <input checked="" type="checkbox"/> SE Sweden..... |
| <input checked="" type="checkbox"/> ES Spain..... | <input checked="" type="checkbox"/> SG Singapore..... |
| <input checked="" type="checkbox"/> FI Finland..... | <input checked="" type="checkbox"/> SI Slovenia..... |
| <input checked="" type="checkbox"/> GB United Kingdom..... | <input checked="" type="checkbox"/> SK Slovakia..... |
| <input checked="" type="checkbox"/> GD Grenada..... | <input checked="" type="checkbox"/> SL Sierra Leone..... |
| <input checked="" type="checkbox"/> GE Georgia..... | <input checked="" type="checkbox"/> TJ Tajikistan..... |
| <input checked="" type="checkbox"/> GH Ghana..... | <input checked="" type="checkbox"/> TM Turkmenistan..... |
| <input checked="" type="checkbox"/> GM Gambia..... | <input checked="" type="checkbox"/> TR Turkey..... |
| <input checked="" type="checkbox"/> HR Croatia..... | <input checked="" type="checkbox"/> TT Trinidad and Tobago..... |
| <input checked="" type="checkbox"/> HU Hungary..... | <input checked="" type="checkbox"/> TZ United Republic of Tanzania..... |
| <input checked="" type="checkbox"/> ID Indonesia..... | <input checked="" type="checkbox"/> UA Ukraine..... |
| <input checked="" type="checkbox"/> IL Israel..... | <input checked="" type="checkbox"/> UG Uganda..... |
| <input checked="" type="checkbox"/> IN India..... | <input checked="" type="checkbox"/> US United States of America..... |
| <input checked="" type="checkbox"/> IS Iceland..... | |
| <input checked="" type="checkbox"/> JP Japan..... | <input checked="" type="checkbox"/> UZ Uzbekistan..... |
| <input checked="" type="checkbox"/> KE Kenya..... | <input checked="" type="checkbox"/> VN Viet Nam..... |
| <input checked="" type="checkbox"/> KG Kyrgyzstan..... | <input checked="" type="checkbox"/> YU Yugoslavia..... |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea..... | <input checked="" type="checkbox"/> ZA South Africa..... |
| | <input checked="" type="checkbox"/> ZW Zimbabwe..... |
| <input checked="" type="checkbox"/> KR Republic of Korea..... | Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet: |
| <input checked="" type="checkbox"/> KZ Kazakhstan..... | <input checked="" type="checkbox"/>Colombia..... |
| <input checked="" type="checkbox"/> LC Saint Lucia..... | <input checked="" type="checkbox"/>Equador..... |
| <input checked="" type="checkbox"/> LK Sri Lanka..... | |

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

Supplemental Box*If the Supplemental Box is not used, this sheet should not be included in the request.*

1. If, in any of the Boxes, the space is insufficient to furnish all the information: in such case, write "Continuation of Box No..." [indicate the number of the Box] and furnish the information in the same manner as required according to the captions of the Box in which the space was insufficient in particular:

- (i) if more than two persons are involved as applicants and/or inventors and no "continuation sheet" is available; in such case, write "Continuation of Box No. III" and indicate for each additional person the same type of information as required in Box No. III. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below;
- (ii) if, in Box No. II or in any of the sub-boxes of Box No. III, the indication "the States indicated in the Supplemental Box" is checked: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the applicant(s) involved and, next to (each) such name, the States(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is applicant;
- (iii) if, in Box No. II or in any of the sub-boxes of Box No. III the inventor or the inventor/applicant is not inventor for the purposes of all designated States or for the purposes of the United States of America; in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the inventor(s) and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is inventor;
- (iv) if, in addition to the agent(s) indicated in Box No. IV, there are further agents; in such case, write "Continuation of Box No. IV" and indicate for each further agent the same type of information as required in Box No. IV;
- (v) if, in Box No. V., the name of any State (or OAPI) is accompanied by the indication "patent of addition" or "certificate of addition" or if, in Box No. V, the name of the United States of America is accompanied by an indication "continuation" or "continuation-in-part" in such case, write "Continuation of Box No. V" and the name of each State involved (or OAPI), and after the name of each such State (or OAPI), the number of the parent title or parent application and the date of grant of the parent title or filing of the parent application;
- (vi) if, in Box No. VI, there are more than three earlier applications whose priority is claimed: in such case, write "Continuation of Box No. VI" and indicate for each additional earlier application the same type of information as required in Box No. VI;
- (vii) if, in Box No. VI, the earlier application is an ARIPO application: in such case, write "Continuation of Box No. VI", specify the number of the item corresponding to that earlier application and indicate at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed.

2. If, with regard to the precautionary designation statement contained in Box No. V, the applicant wishes to exclude any State(s) from the scope of that statement; in such case, write "Designation(s) excluded from precautionary designation statement" and indicate the name or two-letter code of each State so excluded.

3. If the applicant claims, in respect of any designated Office, the benefits of provisions of the national law concerning non-prejudicial disclosures or exceptions to lack of novelty: in such case, write "Statement concerning non-prejudicial disclosures or exceptions to lack of novelty" and furnish that statement below.

CONTINUATION OF BOX IV

Powers, Irving
 Leavitt, Donald G.
 Roedel, John K., Jr.
 Godar, Michael E.
 Hejlek, Edward J.
 Lahey, William E.
 Heywood, Richard G.
 Agovino, Frank R.
 James, Kurt F.
 Blosser, G. Harley
 Fleischut, Paul I.J.
 Keil, Vincent M.
 Evans, Robert M.
 Polcyn, Laura R.
 Petrillo, Kathleen M.
 Crawford, David E., Jr.
 Schuth, Richard, A.
 Bridge, Richard L.
 Bain, Robert M.
 Bodenhause, John, M.

Goff, Christopher M.
 Allen, Derick E.
 Cutler, Matthew L.
 Munsell, Michael G.
 Hui, Karen Y.
 Kinney, Anthony R.
 Chickos, Sara J.
 Tuegel, Donald W.
 Klein, Brian P.
 Ritchey, Steven M.
 Thomas, Michael J.
 Doty, Kathryn J.
 Ritchey, Steven, M.
 Davis, James, E.
 Thomas, Michael, J.
 Barta, James, J., Jr.



Box No. VI PRIORITY CLAIM☐ Further priority claims are indicated in the Supplemental Box.

Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application:* regional Office	international application: receiving office
item (1) 19.05.2000 19 May 2000	60/205,524	U.S. ^A US		
item (2) 24.05.2000 24 May 2000	60/206,628	U.S. ^A US		
item (3) 02.03.2001 02 March 2001	60/273,234	U.S. ^A US		
item (4) 08.03.2001 08 March 2001	60/274,368	U.S. ^A US		

- ☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): (1), (2), (3), AND (4)

*Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen: the two-letter code may be used):
ISA /EP

Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):
Date (day/month/year) _____ Number _____ Country (or regional Office) _____

Box No. VIII CHECK LIST; LANGUAGE OF FILING

This international application contains the following number of sheets:

request : 8
description (excluding sequence listing part) : 310
claims : 49
abstract : 1
drawings : 4
sequence listing part of description : _____

Total number of sheets : 372

This international application is accompanied by the item(s) marked below:

1. ☒ fee calculation sheet
2. ☐ separate signed power of attorney
3. ☐ copy of general power of attorney; reference number, if any:
4. ☐ statement explaining lack of signature
5. ☐ priority document(s) identified in Box No. VI as item(____):
6. ☐ translation of international application into (language):
7. ☐ separate indications concerning deposited microorganism or other biological material
8. ☐ nucleotide and/or amino acid sequence listing in computer readable form
9. ☐ other (specify):

Figure of the drawings which should accompany the abstract: A1

Language of filing of the international application: ENGLISH

Box No. IX SIGNATURE OF APPLICANT OR AGENT

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

FOR: MONSANTO TECHNOLOGY LLC

BY: _____

Typed Name and Title:

For receiving Office use only

(21.05.01)

1. Date of actual receipt of the purported international application:	JC19 Rec'd PCT/PTO 21 MAY 2001	2. Drawings:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:		<input type="checkbox"/> received:
4. Date of timely receipt of the required corrections under PCT Article 11(2):		<input type="checkbox"/> not received:
5. International Searching Authority (if two or more are competent): ISA/ EP	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.	

For International Bureau use only

Date of receipt of the record copy by the International Bureau:

